INTERNATIONAL JOURNAL OF
RADIATION ONCOLOGY BIOLOGY·PHYSICS
LIST OF CONTENTS

VOLUME 14, NUMBER 1 JANUARY 1988

TABLE OF CONTENTS

Editor's Note
P. Rubin 1

● *ORIGINAL CONTRIBUTIONS*

The Effect of Young Age on Tumor Recurrence in the Treated Breast After Conservative Surgery and Radiotherapy
A. Recht, J. L. Connolly, S. J. Schnitt, B. Silver, M. A. Rose, S. Love and J. R. Harris 3

Malignant Tumors of the Nasal Cavity and Ethmoid and Sphenoid Sinuses
J. T. Parsons, W. M. Mendenhall, A. A. Mancuso, N. J. Cassisi and R. R. Million 11

Analysis of Late Complications After Rapid Hyperfractionated Radiotherapy in Advanced Head and Neck Cancers
T. D. Nguyen, X. Panis, D. Froissart, M. Legros, P. Coninx and M. Loirette 23

Analysis of the Histopathology of Radiation Myelopathy
T. E. Schultheiss, L. C. Stephens and M. H. Maor 27

Preoperative Radiation and Chemotherapy for Localized Squamous Cell Carcinoma of the Esophagus: A RTOG Study
H. G. Seydel, L. Leichman, R. Byhardt, J. Cooper, A. Herskovic, J. Libnock, R. Pazdur, J. Speyer, J. Tschan and RTOG 33

Post-Operative Thoracic Irradiation With or Without Levamisole in Non-Small Lung Cancer: Results of a Radiation Therapy Oncology Group Study
A. Herskovic, M. Bauer, H. G. Seydel, R. Yesner, R. L. S. Doggett, C. A. Perez, L. M. Durbin and M. Zinninger 37

Combined Chemoradiotherapy in Limited-Disease, Inoperable Non-Small Cell Lung Cancer
T. Umsawasdi, M. Valdivieso, H. T. Barkley Jr., T. Chen, D. J. Booser, D. F. Chiuten, H. M. Dhingra, W. K. Murphy and D. T. Carr 43

Absence of Prognostic Significance, Peritoneal Dissemination and Treatment Advantage in Endometrial Cancer Patients With Positive Peritoneal Cytology
A. Konski, C. Poulter, H. Keys, P. Rubin, J. Beecham and K. Doane 49

The Role of Computed Tomography in the Evaluation of Post-Mastectomy Locally Recurrent Breast Cancer
J. Rosenman, C. A. Churchill, M. A. Mauro, L. A. Parker and J. Newsome 57

Radiation Dose Response of Normal Brain
J. R. Fike, C. E. Cann, K. Turowski, R. J. Higgins, A. S. L. Chan, T. L. Phillips and R. L. Davis 63

The Efficacy of Combined Chemotherapy and Radiotherapy in Advanced Non-Metastatic Breast Cancer
J. Boyages and A. O. Langlands 71

Combined Modality Treatment of Localized Unresectable Adenocarcinoma of the Pancreas
M. Mohiuddin, R. J. Cantor, W. Biermann, S. M. Weiss, D. Barbot and F. E. Rosato 79

Alteration in Hematopoietic Stem Cell Seeding and Proliferation by Both High and Low Dose Rate Irradiation of Bone Marrow Stromal Cells *In Vitro*
J. S. Greenberger, T. J. FitzGerald, V. Klassen, P. Anklesaria, D. Bushnell, K. Kase and M. A. Sakakeeny 85

Unilateral Kidney Irradiation and Late Retreatment With Cis-Dichlorodiammineplatinum (II): Functional Measurements with ^{99m}Technetium-Dimercaptosuccinic Acid
W. Landuyt, A. J. Van der Kogel, M. De Roo, M. Hoogmartens, K. K. Ang and E. van der Schueren 95

Effect of Simultaneous Administration of Bleomycin on the Acute Skin Reactions of Mice After Single and Fractionated Doses of Radiation
L. Vanuytsel, Y. Feng, W. Landuyt, A. Begg and E. van der Schueren 103

Radiation Induced Heart Disease in Hypertensive Rats
S. Lauk and K.-R. Trott 109

Dynamic Stereotactic Radiosurgery
E. B. Podgorsak, A. Olivier, M. Pla, P.-Y. Lefebvre and J. Hazel 115

The Distribution of Power and Heat Produced by Interstitial Microwave Antenna Arrays: I. Comparative Phantom and Canine Studies
D. L. Denman, H. R. Elson, G. C. Lewis, J. C. Breneman, C. L. Clausen, J. Dine and B. S. Aron 127

Interaction of Interstitial Photodynamic Therapy and Interstitial Hyperthermia in a Rat Rhabdomyosarcoma—A Pilot Study
P. C. Levendag, H. P. A. Marijnissen, V. J. de Ru, J. A. C. Versteeg, G. C. van Rhoon and W. M. Star 139

Some Implications of the Linear Quadratic Model for Tumor Control Probability
R. J. Yaes 147

● *OUR HISTORY AND HERITAGE*

Sir Brian Windeyer
J. A. del Regato 159

● *BRIEF COMMUNICATIONS*

Interstitial Radiation Therapy in the Treatment of Childhood Soft-Tissue Sarcomas
W. J. Curran Jr., P. Littman and R. B. Raney 169

The Development of Graves' Disease Following Radiation Therapy in Hodgkin's Disease
J. S. Loeffler, N. J. Tarbell, J. R. Garber and P. Mauch 175

● *TECHNICAL INNOVATIONS AND NOTES*

The Influence of Lung Density Corrections on Treatment Planning for Primary Breast Cancer
B. A. Fraass, A. S. Lichter, D. L. McShan, B. R. Yanke, R. F. Diaz, K. S. Yeakel and J. van de Geijn 179

Remote Afterloading Techniques for the Treatment of Nasopharyngeal and Endometrial Cancer
J. W. Denham, A. C. Baldacchino, J. Gutte and R. L. Nicholls 191

Total Lymphoid Irradiation for Multiple Sclerosis
C. K. Devereux, R. Vidaver, M. P. Hafstein, G. Zito, R. Troiano, P. C. Dowling and S. D. Cook 197

● *EDITORIALS*

Seduced by Oxygen
E. Finkelstein and E. Glatstein 205

The Enigma of Accelerated Hyperfractionated Radiation Therapy for Head and Neck Cancer
C. C. Wang 209

● *CORRESPONDENCE*

Rebuttal
M. Catterall 211

Is Surfactant Release a Reliable Predictor of Radiation Pneumonitis?
J. D. Down, P. C. Coultas and S. B. Field 211

Prophets That Don't Predict
P. Rubin and J. N. Finkelstein 212

Rebuttal
T. D. Nguyen 212

● *ERRATUM* 213

● *MEETINGS* 215

● *SOFTWARE SURVEY SECTION* A1

VOLUME 14, NUMBER 2 FEBRUARY 1988

TABLE OF CONTENTS

Editor's Note
P. Rubin 217

● *ORIGINAL CONTRIBUTIONS*

The Effect of Dose of Thoracic Irradiation on Recurrence in Patients With Limited Stage Small Cell Lung Cancer. Initial Results of a Canadian Multicenter Randomized Trial
P. Coy, I. Hodson, D. G. Payne, W. K. Evans, R. Feld, A. S. MacDonald, D. Osoba and J. L. Pater 219

Management of Seminoma With Bulky Abdominal Disease
E. Laukkanen, I. Olivotto and S. Jackson 227

Definitive Irradiation for Early Stage Breast Cancer: The University of Pennsylvania Experience
L. J. Solin, B. Fowble, K. L. Martz and R. L. Goodman 235

The Outcome of Treatment of 313 Patients With T-1 (UICC) Prostate Cancer Treated With External Beam Irradiation
G. E. Hanks, J. M. Krall, K. L. Martz, J. J. Diamond and S. Kramer 243

Squamous Cell Carcinoma of the Head and Neck Treated With Radiation Therapy: The Impact of Neck Stage on Local Control
W. M. Mendenhall, J. T. Parson, R. J. Amdur, A. E. Spangler, T. R. Williams, N. J. Cassisi and R. R. Million 249

Our Experience of Conservative Treatment of Anal Canal Carcinoma Combining External Irradiation and Interstitial Implant: 32 Cases Treated Between 1973 and 1982
N. Y. K. Ng Ying Kin, J. Pigneux, H. Auvray, R. Brunet, L. Thomas and R. Denepoux 253

Endocavitary Irradiation for Rectal Cancer and Villous Adenomas
J. J. Kovalic 261

Treatment of Bladder Cancer With Interstitial Iridium-192 Implantation and External Beam Irradiation
K. L. Straus, P. Littman, A. J. Wein, R. Whittington and J. E. Tomaszewski 265

Whole Abdominal Irradiation Following Chemotherapy in Advanced Ovarian Carcinoma
A. Kuten, M. Stein, M. Steiner, R. Rubinov, R. Epelbaum and Y. Cohen 273

High-Dose Rate Intracavitary Therapy for Carcinoma of the Uterine Cervix: II. Risk Factors for Rectal Complication
T. Teshima, M. Chatani, K. Hata and T. Inoue 281

Radiation Therapy for the Treatment of Non-Eighth Nerve Intracranial Neurilemmoma
K. E. Wallner, L. H. Pitts, R. L. Davis and G. E. Sheline 287

Assessment of Skin Dose and Its Relation to Cosmesis in the Conservative Treatment of Early Breast Cancer
F. Habibollahi, H. M. O. Mayles, W. P. M. Mayles, P. J. Winter, D. Tong, I. S. Fentiman, M. A. Chaudary and J. L. Hayward 291

From 2 Gy to 1 Gy per Fraction: Sparing Effect in Rat Spinal Cord?
E. van der Schueren, W. Landuyt, K. K. Ang and A. J. van der Kogel 297

Heavy Charged-Particle Induced Lesions in Rabbit Cerebral Cortex
K. H. Woodruff, J. T. Lyman and J. I. Fabrikant 301

Influence of Misonidazole, SR-2508, RSU-1069 and WR-2721 on Spontaneous Metastases in C57BL Mice
A. Kanclerz and J. D. Chapman 309

Radiotherapy of the Rhabdomyosarcoma R1H of the Rat: Kinetics of Cellular Inactivation by Fractionated Irradiation
H. Vogler and H.-P. Beck-Bornholdt 317

Hyperthermia Thermometry Evaluation: Criteria and Guidelines
P. N. Shrivastava, T. K. Saylor, A. Y. Matloubieh and B. R. Paliwal 327

Suppression of Growth of 7,12-Dimethylbenzanthracene-Induced Mammary Carcinomas in Female Rats by Repeated Whole-Body Hyperthermia (41-42°C)
R. W. Hill and C. W. Welsch 337

● *BRIEF COMMUNICATIONS*

Regional Hyperthermia—Assessment of Tolerance to Treatment
M. V. Pilepich, R. J. Myerson, B. N. Emami, C. A. Perez, W. Straube and D. von Gerichten 347

Intracatheter Hyperthermia and Iridium-192 Radiotherapy in the Treatment of Bile Duct Carcinoma
J. Y. C Wong, N. L. Vora, C. K. Chou, J. A. McDougall, K. W. Chan, D. O. Findley, B. W. Forell, K. H. Luk, V. J. Philben and J. D. Beatty 353

A Predictive Assay for Human Tumor Cellular Response to Hyperthermia Using Dansyl Lysine Staining and Flow Cytometry
S. Y. Woo, G. C. Rice, D. S. Kapp and G. M. Hahn 361

Age Factor Relevant to the Development of Radiation Pneumonitis in Radiotherapy of Lung Cancer
K. Koga, S. Kusumoto, K. Watanabe, K. Nishikawa, K. Harada and H. Ebihara 367

● *TECHNICAL INNOVATIONS AND NOTES*

A System for Stereotactic Radiosurgery With a Linear Accelerator
W. Lutz, K. R. Winston and N. Maleki 373

Dosimetric Characteristics of a 6MV Photon Beam From a Linear Accelerator With Asymmetric Collimator Jaws
J. R. Palta, K. M. Ayyangar and N. Suntharalingam 383

Seed Loss in Interstitial Radiotherapy of Prostatic Carcinoma With I-125
H. Sommerkamp, M. Rupprecht and M. Wannenmacher 389

● *EDITORIALS*

Dose-Response in Small Cell Carcinoma
J. D. Cox 393

Seminoma With Bulky Abdominal Disease
G. K. Zagars 395

● *CORRESPONDENCE*

Conservative Treatment of Breast Cancer—Where Should the Booster Dose Go?
J. W. Denham, M. L. Carter and P. G. Gill 399

Inherent Acceleration of Tumor Dose-Rate in Hyperfractionated Regimens
H. R. Withers 400

Letter to the Editor
C. H. Albrecht 400

Is Misonidazole Induced Neurotoxicity Permanent?
R. D. Jones, J. L. Moore, I. C. M. Paterson, P. T. D. K. Dawes and J. M. Henk 400

● *MEETINGS* 403

● *ONCOLIT* A1

● *SOFTWARE SURVEY SECTION* A9

VOLUME 14, NUMBER 3 MARCH 1988

TABLE OF CONTENTS

Editor's Note
P. Rubin 405

● *ORIGINAL CONTRIBUTIONS*

Improved Survival of Poor Prognosis Diffuse Histiocytic (Large Cell) Lymphoma Managed With Sequential Induction Chemotherapy, "Boost" Radiation Therapy, and Autologous Bone Marrow Transplantation
M. Chadha, B. Shank, Z. Fuks, B. D. Clarkson, P. Bonfiglio, C. Gnecco and S. Gulati 407

Retrospective Analysis of Stage I and II Indolent Lymphomas at the National Cancer Institute
T. S. Lawrence, W. J. Urba, S. M. Steinberg, J. T. Sundeen, J. Cossman, R. C. Young and E. Glatstein 417

Postoperative Abdominopelvic Radiation Therapy for Ovarian Cancer
N. Goldberg and R. E. Peschel 425

Radiotherapy in the Treatment of Ovarian Dysgerminomas
A. P. Lawson and G. F. Adler 431

Adjunctive Radiotherapy With Strontium-90 in the Treatment of Conjunctival Squamous Cell Carcinoma
J. H. Kearsley, R. S. Fitchew and R. G. S. Taylor 435

Adjuvant Postoperative Radiation Therapy Following Radical Hysterectomy in Stage IB CA of the Cervix—Analysis of Treatment Failure
R. Y. Kim, M. M. Salter and H. M. Shingleton 445

The Effect of Fraction Size on Control of Early Glottic Cancer
F. Schwaibold, A. Scariato, M. Nunno, P. E. Wallner, R. A. Lustig, E. Rouby, D. Gorshein and J. Wenger 451

Results of Therapeutic Cranial Irradiation in Small Cell Lung Cancer
J. Carmichael, J. M. Crane, P. A. Bunn, E. Glatstein and D. C. Ihde 455

Nasopharyngeal Carcinoma: Result of Treatment With Cis-Diamminedichloroplatinum II, 5 Fluorouracil, and Radiation Therapy
V. Atichartakarn, P. Kraiphibul, P. Clongsusuek, L. Pochanugool, B. Kulapaditharom and V. Ratanatharathorn 461

The Use of Postoperative Irradiation for the Prevention of Heterotopic Bone Formation After Total Hip Replacement
J. E. Sylvester, P. Greenberg, M. T. Selch, B. J. Thomas and H. Amstutz 471

Three-Dimensional Internal Mammary Lymphoscintigraphy: Implications for Radiation Therapy Treatment Planning for Breast Carcinoma
A. Recht, R. L. Siddon, W. D. Kaplan, J. W. Andersen and J. R. Harris 477

Dose-Limiting Complications From Upper Half Body Irradiation in C3H Mice
J. D. Down, N. J. Tarbell, M. Warhol and P. Mauch 483

Modification of Radiation-Induced Damage to Bone Marrow Stem Cells by Dose Rate, Dose Fractionation, and Prior Exposure to Cytoxan as Judged by the Survival of CFU_s: Application to Bone Marrow Transplantation (BMT)
R. G. Evans, C. L. Wheatley and J. R. Nielsen 491

Radiotherapy of the Rhabdomyosarcoma R1H of the Rat: The Influence of the Number of Fractions on Tumor and Skin Response
F. Würschmidt, H. Vogler and H.-P. Beck-Bornholdt 497

Dose Distribution of Neutron Beam and Chromosome Analysis
S. Matsubara, Y. Kuwabara, J. Horiuchi, S. Suzuki and A. Ito 503

Applicator for Optimum Cobalt-60 Primary Breast Treatments
G. J. Kutcher, M. Hunt and B. McCormick 511

Hyperthermic Therapy of Deep Seated Tumors: Comparison of the Heating Efficiencies of an Annular Array Applicator and a Capacitively Coupled Radiofrequency System
S. Egawa, I. Tsukiyama, Y. Akine, Y. Kajiura, T. Ogino and K. Yamashita 521

Biochemical and Cellular Effects of Radiofrequency Induced Interstitial Hyperthermia on Normal Canine Liver
M. C. Ries, A. J. Milligan, H. W. Merrick and R. R. Dobelbower Jr. 529

The Distribution of Power and Heat Produced by Interstitial Microwave Antenna Arrays: II. The Role of Antenna Spacing and Insertion Depth
D. L. Denman, A. E. Foster, G. C. Lewis Jr., K. P. Redmond, H. R. Elson, J. C. Breneman, J. G. Kereiakes and B. S. Aron 537

● *SPECIAL FEATURE*

The Structure of Radiation Oncology Practices in the Continental United States
J. J. Diamond, G. E. Hanks and S. Kramer 547

● *ONCOLOGY INTELLIGENCE*

A Unified Approach to Dose-Effect Relationships in Radiotherapy. I: Modified TDF and Linear Quadratic Equations
C. G. Orton and L. Cohen 549

A Unified Approach to Dose-Effect Relationships in Radiotherapy. II: Inhomogeneous Dose Distributions
C. G. Orton 557

Second Primary Cancers of the Head and Neck Following Treatment of Initial Primary Head and Neck Cancers
R. G. Parker and J. E. Enstrom 561

● *BRIEF COMMUNICATIONS*

Does Parasternal Irradiation Reduce Thoracic Vertebral Metastases in Breast Cancer?
L. Grimard, L. Eapen, R. McDermot, P. Genest and R. Nair 565

Remote Interstitial Afterloading in Cancer of the Prostate: Preliminary Experience With the MicroSelectron
A. T. Porter, J. W. Scrimger and J. S. Pocha 571

Hypofractionated External Radiation With High and Low Dose Rates in the Treatment of Advanced Cancer of the Cervix
N. G. Huilgol, A. R. Mehta, V. Kulkarni, N. Selvaraj and N. Trivedi 577

● *TECHNICAL INNOVATIONS AND NOTES*

Effect of a Femoral Head Prosthesis On Megavoltage Beam Radiotherapy
P. J. Biggs and M. D. Russell 581

On the Choice of Phantom Material for the Dosimetry of ^{192}Ir Sources
J. A. Meli, A. S. Meigooni and R. Nath 587

● *EDITORIAL*

Dose Prescription Dilemma
F. R. Hendrickson 595

● *CORRESPONDENCE*

Accurate English
T. F. Sandeman 597

In Defense of "The Right Verb"
E. C. Halperin 597

Interstitial Implantation is Essential
J. T. Parsons and R. R. Million 597

To the Editor
B. Esche and J. Crook 598

SVC Syndrome and Thrombus Formation
A. Arlington 598

● *MEETINGS* 599

● *SOFTWARE SURVEY SECTION* A1

VOLUME 14, NUMBER 4 APRIL 1988

TABLE OF CONTENTS

SPECIAL ISSUE: DEDICATION TO GILBERT H. FLETCHER

Editor's Note
P. Rubin 601

● *DEDICATION*

Dedication to Gilbert H. Fletcher, M.D.
L. J. Peters 603

● *ORIGINAL CONTRIBUTIONS*

Radiotherapy Alone in Carcinoma of the Intact Uterine Cervix According to G. H. Fletcher Guidelines: A French Cooperative Study of 1383 Cases
J.-C. Horiot, J. Pigneux, H. Pourquier, S. Schraub, E. Achille, R. Keiling, P. Combes, R. Rozan, C. Vrousos and N. Daly 605

Analysis of Pelvic Tumor Control and Impact on Survival in Carcinoma of the Uterine Cervix Treated With Radiation Therapy Alone
C. A. Perez, R. R. Kuske, H. M. Camel, A. E. Galakatos, M. A. Hederman, M.-S. Kao and B. J. Walz 613

Acute and Late Toxicity Associated With Sequential Bleomycin-Containing Chemotherapy Regimens and Radiation Therapy in the Treatment of Carcinoma of the Nasopharynx
L. J. Peters, M. L. Harrison, I. W. Dimery, R. Fields, H. Goepfert and M. J. Oswald 623

Primary Radiotherapy of Squamous Cell Carcinoma of the Oropharynx and Pharyngolarynx: Tentative Multivariate Modelling System to Predict the Radiocurability of Neck Nodes
J.-P. Bataini, J. Bernier, B. Asselain, C. Lave, C. Jaulerry, F. Brunin and D. Pontvert 635

Chemodectoma of the Temporal Bone: A Comparison of Surgical and Radiotherapeutic Results
M.-L. Wang, D. H. Hussey, J. F. Doornbos, A. P. Vigliotti and B.-C. Wen 643

Hyperfractionation for Head and Neck Cancer
J. T. Parsons, W. M. Mendenhall, N. J. Cassisi, J. H. Isaacs Jr. and R. R. Million 649

Prognostic Implications of Age in Breast Cancer Patients Treated With Tumorectomy and Irradiation or With Mastectomy
R. H. Matthews, M. D. McNeese, E. D. Montague and M. J. Oswald 659

The Efficacy of Delayed Radiotherapy for Locoregionally Recurrent Postmastectomy Breast Cancer
A. Rodger, H. J. Stewart and G. K. White 665

Conservative Treatment of Early Breast Cancer
M. R. Baeza, J. Solé, A. León, J. Arraztoa, R. Rodríguez, R. Claure, S. Cornejo and J. Cornejo 669

Management of Elderly Patients With Primary Breast Cancer
L. M. Toonkel, I. Fix, L. H. Jacobson and N. Bamberg 677

The Adjuvant Role of Two Cycles of MOPP and Low-Dose Lung Irradiation in Stage IA Through IIB Hodgkin's Disease: Preliminary Results
L. M. Fuller, F. B. Hagemeister, L. B. North, P. McLaughlin, W. V. Velasquez and F. Cabanillas 683

Treatment of Soft Tissue Sarcomas by Preoperative Irradiation and Conservative Surgical Resection
H. T. Barkley Jr., R. G. Martin, M. M. Romsdahl, R. Lindberg and G. K. Zagars 693

The Role of Radiation Therapy in Stages A2 and B Adenocarcinoma of the Prostate
G. K. Zagars, A. C. von Eschenbach, D. E. Johnson and M. J. Oswald 701

Charged Particle Radiotherapy of Selected Tumors in the Head and Neck
J. R. Castro and M. M. Reimers 711

Inadequacy of Conventional Computerized Tomography Scans for Treatment Planning of Tangential Breast (Chest Wall) Fields
H. D. Kogelnik, M.-G. Brandis, H. Rahim and H. Mandl 721

Safety of Adjunctive Transvaginal Beam Therapy in the Treatment of Squamous Cell Carcinoma of the Uterine Cervix
M. J. Seider, L. J. Peters, J. T. Wharton and M. J. Oswald 729

Hyperfractionated Split-Course Whole Abdominal Radiotherapy for Ovarian Carcinoma: Tolerance and Toxicity
J. S. Kong, L. J. Peters, J. T. Wharton, K. K. Ang, L. Delclos, D. M. Gershenson, L. J. Copeland, C. L. Edwards, R. S. Freedman, P. B. Saul and C. A. Stringer 737

Primary Squamous Cell Carcinoma of the Vagina Treated by Radiotherapy: A Failures Analysis—The M. D. Anderson Hospital Experience 1955–1982
F. Dancuart, L. Delclos, J. T. Wharton and E. G. Silva 745

Treatment Volume and Tissue Tolerance
H. R. Withers, J. M. G. Taylor and B. Maciejewski 751

Development of a Hospital-Based Proton Beam Treatment Cancer
J. M. Slater, D. W. Miller and J. O. Archambeau 761

● *SPECIAL FEATURE*

Potential for Improvement in Radiation Therapy
H. D. Suit, J. Becht, J. Leong, M. Stracher, W. C. Wood, L. Verhey and M. Goitein 777

Is There a Role for Post-Operative Adjuvant Radiation in Breast Cancer? Beautiful Hypothesis Versus Ugly Facts: 1987 Gilbert H. Fletcher Lecture
S. H. Levitt 787

● *REVIEW ARTICLE*

Planned Preoperative Irradiation in the Management of Clinical Stage B2-C (T3) Bladder Carcinoma
J. T. Parsons and R. R. Million 797

● *BRIEF COMMUNICATION*

Evaluation of Unplanned Interruptions in Radiotherapy Treatment Schedules
R. D. Lindberg, K. Jones, H. H. Garner, B. Jose, W. J. Spanos Jr. and D. Bhatnagar 811

● *TECHNICAL INNOVATIONS AND NOTES*

Preoperative Planning of Breast Implants Using the Breast Implant Planning Device (BIPD)
J. Bedwinek 817

● *CORRESPONDENCE*

Dermatophytosis Confined to Irradiated Skin: A Case Report
M. H. Maor 825

● *MEETINGS* 827

● *ONCOLIT* A1

● *SOFTWARE SURVEY SECTION* A9

VOLUME 14, NUMBER 5 MAY 1988

TABLE OF CONTENTS

Editor's Note
P. Rubin 829

● *ORIGINAL CONTRIBUTIONS*

Oxygen Distribution in Squamous Cell Carcinoma Metastases and Its Relationship to Outcome of Radiation Therapy
R. A. Gatenby, H. B. Kessler, J. S. Rosenblum, L. R. Coia, P. J. Moldofsky, W. H. Hartz and G. J. Broder 831

Limited External Beam and Interstitial ^{192}Iridium Irradiation in the Treatment of Carcinoma of the Base of the Tongue: A Ten Year Experience
A. A. Puthawala, A. M. Niser Syed, D. L. Eads, L. Gillin and T. C. Gates 839

Salvage Irradiation of Oropharynx and Mobile Tongue About 192 Iridium Brachytherapy in Centre Alexis Vautrin
D. Langlois, S. Hoffstetter, L. Malissard, M. Pernot and A. Taghian 849

Multiple Fraction Per Day Radiation Therapy for Inoperable Esophageal Cancer
A. De Paoli, G. Boz, M. G. Trovó, G. Franchin, M. Roncadin, R. Talamini, C. Gobitti, R. Bortolus, E. Minatel, M. Arcicasa and E. Grigoletto 855

Outcome of Prophylactic and Therapeutic Cranial Irradiation in Disseminated Small Cell Lung Carcinoma: A Southwest Oncology Group Study
J. G. Mira, T. T. Chen, R. B. Livingston and H. E. Wilson 861

A Randomized Study on Palliative Radiation Therapy for Inoperable Non Small Cell Carcinoma of the Lung
P. Teo, T. H. Tai, D. Choy and K. H. Tsui 867

To Boost or Not to Boost: Decreasing Radiation Therapy in Conservative Breast Cancer Treatment When "Inked" Tumor Resection Margins are Pathologically Free of Cancer
R. D. Pezner, J. A. Lipsett, K. Desai, N. Vora, J. Terz, L. R. Hill and K. H. Luk 873

Venocclusive Disease of the Liver After Allogeneic Bone Marrow Transplantation in Man
G. Ganem, M.-F. Saint-Marc Girardin, M. Kuentz, C. Cordonnier, G. Marinello, C. Teboul, F. Braconnier, J.-P. Vernant, D. Dhumeaux and J.-P. Le Bourgeois 879

Neutron Therapy in Cervical Cancer: Results of a Phase III RTOG Study
M. H. Maor, B. W. Gillespie, L. J. Peters, A. Wambersie, T. W. Griffin, F. J. Thomas, L. Cohen, N. Conner and P. Gardner 885

High-Dose-Rate Intracavitary Irradiation in the Treatment of Carcinoma of the Uterine Cervix: Early Experience With 84 Patients
Y. Akine, H. Arimoto, T. Ogino, Y. Kajiura, I. Tsukiyama, S. Egawa, T. Yamada, K. Tanemura, R. Tsunematsu, K. Ohmi, T. Sonoda and T. Kasamatsu 893

Mini-Colpostats in the Treatment of Carcinoma of the Uterine Cervix
R. R. Kuske, C. A. Perez, A. J. Jacobs, E. D. Slessinger, M. A. Hederman, B. J. Walz, M. S. Kao and H. M. Camel 899

Heterogeneity of Radiation Response of a Parent Human Epidermoid Carcinoma Cell Line and Four Clones
R. R. Weichselbaum, M. A. Beckett, W. Dahlberg and A. Dritschilo 907

Applicability of Animal Tumor Data to Cancer Therapy in Humans
J. E. Moulder, J. Dutreix, S. Rockwell and D. W. Siemann 913

Residual Radiation Damage in Murine Lung Assessed by Pneumonitis
N. H. A. Terry, S. L. Tucker and E. L. Travis 929

Tolerance of the Canine Bladder to Intraoperative Radiation Therapy: An Experimental Study
T. J. Kinsella, W. F. Sindelar, A. M. DeLuca, M. Barnes, Z. Tochner, A. Mixon and E. Glatstein 939

Lactate-Induced Inhibition of Tumor Cell Proliferation
E. Marx, W. Mueller-Klieser and P. Vaupel 947

Misonidazole in Fractionated Radiotherapy of a Murine Mammary Carcinoma: Comparison of Tumor and Normal Tissue Response
H. B. Stone 957

Miniature Radiation Dosimeter for *In Vivo* Radiation Measurements
R. C. Hughes, D. Huffman, J. V. Snelling, T. E. Zipperian, A. J. Ricco and C. A. Kelsey 963

Development of an ^{241}Am Applicator for Intracavitary Irradiation of Gynecologic Cancers
R. Nath, R. E. Peschel, C. H. Park and J. J. Fischer 969

A Hyperthermia Study of Differential Sensitivity and Thermotolerance in AKR Murine Leukemia and Normal Bone Marrow Cells
H. I. Robins, R. A. Steeves, C. L. Schmitt, C. Peterson and P. A. Martin 979

The Use of Dansyl Lysine to Assess Heat Damage and Thermotolerance of Normal Tissues
R. Sekiguchi, G. C. Rice and G. M. Hahn 983

An Investigation Into the Combined Effects of X-Irradiation and 3MHz Ultrasound-Induced Hyperthermia on Pig Skin
G. ter Haar and J. W. Hopewell 989

Treatment Planning Study for Carcinoma of the Esophagus: Helium Ions Versus Photons
S. R. Zink, J. T. Lyman, J. R. Castro, G. T. Y. Chen, J. M. Collier and W. M. Saunders 993

● *BRIEF COMMUNICATIONS*

Single High Dose–Large Field Irradiation in Drug Resistant Non-Hodgkin's Lymphoma
C. W. Scarantino, K. M. Greven and D. H. Buss 1001

Intraoperative Radiation Therapy of Hepatic Metastases: Technical Aspects and Report of a Pilot Study
A. Dritschilo, K. W. Harter, D. Thomas, R. Nauta, R. Holt, T. C. Lee, S. Rustgi and J. Rodgers 1007

● *TECHNICAL INNOVATIONS AND NOTES*

Computerized Optimization of ^{125}I Implants in Brain Tumors
B. Bauer-Kirpes, V. Sturm, W. Schlegel and W. J. Lorenz 1013

An Intercomparison of Two Dynamic Treatment Techniques, Ring Scan and Spot Scan, for Head and Neck Tumors With the Piotron
M. Takai, H. Blattmann and E. Pedroni 1025

Dosimetry and Treatment Planning for ^{90}Y-Labeled Antiferritin in Hepatoma
P. K. Leichner, N.-C. Yang, T. L. Frenkel, D. M. Loudenslager, W. G. Hawkins, J. L. Klein and S. E. Order 1033

● *EDITORIALS*

Reflections in Rectosigmoid: Retro-Peritoneal vs. Intra-Peritoneal
J. E. Tepper 1043

Radiobiological Studies With Pig Skin
J. W. Hopewell and G. J. M. J. van den Aardweg 1047

Quality Assurance in Hyperthermic Therapy
T. C. Cetas 1051

● *CORRESPONDENCE*

More on the Uro-Oncology Research Group Report of Radical Surgery vs. Radiotherapy for Adenocarcinoma of the Prostate
G. E. Hanks 1053

Rebuttal
D. F. Paulson 1053

Radiobiological Implications of Fractionated Low Dose Rate Irradiations
R. W. DeBoer and J. V. Lebesque 1054

Rebuttal
B. Pierquin and J. J. Mazeron 1056

Toxicity and Amiodarone
C. Topham, J. Brierley and H. Tomlinson 1056

Blood Flow Values
A. J. Milligan and M. Panjehpour 1056

● *MEETINGS* 1059

● *SOFTWARE SURVEY SECTION* A1

VOLUME 14, NUMBER 6 JUNE 1988

TABLE OF CONTENTS

Editor's Note
P. Rubin 1061

● *ORIGINAL CONTRIBUTIONS*

Papillary and Follicular Thyroid Cancer: Impact of Treatment in 1578 Patients
W. J. Simpson, T. Panzarella, J. S. Carruthers, M. K. Gospodarowicz and S. B. Sutcliffe 1063

The Role of Radiotherapy in the Management of Primary Cutaneous Neuroendocrine Tumors (Merkel Cell or Trabecular Carcinoma): Experience at the Peter MacCallum Cancer Institute (Melbourne, Australia)
J. Pacella, M. Ashby, J. Ainslie and C. Minty 1077

Adjuvant Estrogen Following Radiation Therapy for Stage C Adenocarcinoma of the Prostate: Long-Term Results of a Prospective Randomized Study
G. K. Zagars, D. E. Johnson, A. C. von Eschenbach and D. H. Hussey 1085

Randomized Neutron Dose Searching Study for Malignant Gliomas of the Brain: Results of an RTOG Study
G. E. Laramore, M. Diener-West, T. W. Griffin, J. S. Nelson, M. L. Griem, F. J. Thomas, F. R. Hendrickson, B. R. Griffin, L. C. Myrianthopoulos and J. Saxton 1093

Medulloblastoma: Staging and Treatment Outcome
M. Deutsch 1103

The Role of Prophylactic Brain Irradiation in Limited Stage Small Cell Lung Cancer: Clinical, Neuropsychologic, and CT Sequelae
E. Laukkanen, H. Klonoff, B. Allan, D. Graeb and N. Murray 1109

Final Report on Phase I Trial of WR-2721 Before Protracted Fractionated Radiation Therapy
M. M. Kligerman, A. T. Turrisi, III, R. C. Urtasun, A. L. Norfleet, T. L. Phillips, T. Barkley and P. Rubin 1119

Radiation Therapy and Conservation Surgery for Primary and Recurrent Carcinoma of the Vulva: Report of 40 Patients and a Review of the Literature
W. M. Pao, C. A. Perez, R. R. Kuske, G. M. Sommers, H. M. Camel and A. E. Galakatos 1123

Immunosuppression Prior to Marrow Transplantation for Sensitized Aplastic Anemia Patients: Comparison of TLI With TBI
B. Shank, J. A. Brochstein, H. Castro-Malaspina, J. Yahalom, P. Bonfiglio and R. J. O'Reilly 1133

Local Control of Oropharyngeal Carcinoma After Two Accelerated Hyperfractionation Radiation Therapy Schemes
C. C. Wang 1143

Heat, Drugs, and Radiation Given in Combination is Palliative for Unresectable Esophageal Cancer
H. Kai, H. Matsufuji, Y. Okudaira and K. Sugimachi 1147

Iodine-125 Implants Versus External Beam Therapy for Stages A2, B, and C Prostate Cancer
J. D. Morton and R. E. Peschel 1153

High Dose Rate ^{60}Co Remote Afterloading Irradiation in Cancer of the Cervix in Haiti, 1977–1984
O. E. Streeter Jr., A. L. Goldson, C. Chevallier and J. R. Nibhanupudy 1159

Experimental Studies on the Incidence of Metastases After Failure of Radiation Treatment and the Effect of Salvage Surgery
J. Ramsay, H. D. Suit and R. Sedlacek 1165

Canine Cardiomyopathy After Whole Heart and Partial Lung Irradiation
S. L. McChesney, E. L. Gillette and E. C. Orton 1169

Late Effects of Fractionated Pi-Mesons Compared to X Rays on Mouse Lung
A. J. van der Kogel, J. C. Martin, A. R. Smith and M. R. Raju 1175

Estimation of Tumor Oxygenation and Metabolic Rate Using ^{31}P MRS: Correlation of Longitudinal Relaxation With Tumor Growth Rate and DNA Synthesis
P. Okunieff, J. Ramsay, T. Tokuhiro, B. M. Hitzig, E. Rummeny, E. McFarland, L. J. Neuringer and H. Suit 1185

Pathologic Response of the Pancreas and Duodenum to Experimental Intraoperative Irradiation
F. Ahmadu-Suka, E. L. Gillette, S. J. Withrow, P. W. Husted, A. W. Nelson and C. E. Whiteman 1197

Effects of Accelerated Fractionation on Radiation Injury of the Small Intestine: A New Rat Model
M. Hauer-Jensen, L. Poulakos and J. W. Osborne 1205

Growth Phase Related Variation in the Radiation Sensitivity of Human Colon Adenocarcinoma Cells
C. M. L. West, P. C. Keng and R. M. Sutherland 1213

Effects of Changes in Oxygen Tension, pH, and Glucose Concentration on the Response to CCNU of EMT6 Mouse Tumor Monolayer Cells and Multicellular Spheroids
T. T. Kwok and P. R. Twentyman 1221

X Ray Responses of a Human Colon Tumor Cell Line After Exposure to the Differentiation-Inducing Agent N-Methylformamide: Concentration Dependence and Reversibility Characteristics
J. T. Leith and S. F. Bliven 1231

Differential Radiosensitization by the Poly(ADP-Ribose) Transferase Inhibitor 3-Aminobenzamide in Human Tumor Cells of Varying Radiosensitivity
L. R. Kelland, L. Burgess and G. G. Steel 1239

Local Stem Cell Depletion Model for Radiation Myelitis
R. J. Yaes and A. Kalend 1247

● *SPECIAL FEATURE*

Practice Patterns of Palliative Care for the United States 1984–1985
L. R. Coia, G. E. Hanks, K. Martz, A. Steinfeld, J. J. Diamond and S. Kramer 1261

● *OUR HISTORY AND HERITAGE*

Hermann Holthusen
J. A. del Regato 1271

● *BRIEF COMMUNICATIONS*

The Effects of Irradiation on Alaryngeal Voice of Totally Laryngectomized Patients
K. Izdebski, J. Fontanesi, J. C. Ross and D. Hetzler 1281

● *TECHNICAL INNOVATIONS AND NOTES*

Electron Arc Therapy: Chest Wall Irradiation of Breast Cancer Patients
L. K. McNeely, G. M. Jacobson, D. D. Leavitt and J. R. Stewart 1287

A New Stereotactic X-Ray Knife
R. J. Barish and S. V. Barish 1295

Three-Field Isocentric Technique for Breast Irradiation Using Individualized Shielding Blocks
G. Conte, O. Nascimben, G. Turcato, R. Polico, M. B. Idi, L. M. Belleri, F. Bergoglio, F. Simonato, L. Stea, F. Bugin and N. Bortot 1299

Bladder Cooling in Patients Treated With Regional Hyperthermia of the Pelvis Using an Annular Phased Array
D. S. Kapp, S. D. Prionas, P. Fessenden, F.-F. Liu, E. R. Lee and A. W. Lohrbach 1307

Hip Prostheses During Pelvic Irradiation: Effects and Corrections
M. B. Hazuka, G. S. Ibbott and J. J. Kinzie 1311

● *EDITORIALS*

Dose Volume Histograms in Treatment Planning
G. T. Y. Chen 1319

Neuroendocrine Carcinoma of the Skin: Diagnostic and Management Considerations
T. A. Bonfiglio 1321

● *CORRESPONDENCE*

Letter to the Editor
H. G. Seydel 1323

Rebuttal
M. J. John, M. S. Flam and P. A. Mowry 1323

Memorandum from J. A. del Regato, M.D., (December 13, 1966)
J. M. Vaeth 1323

● *ERRATA* 1325

● *MEETINGS* 1327

● *VOLUME 14 LIST OF CONTENTS, AUTHOR INDEX, SUBJECT INDEX* 1329

● *ONCOLIT* A1

VOLUME 14, SUPPLEMENT 1 1988

TABLE OF CONTENTS

International Clinical Trials in Radiation Oncology
(ICTRO)
Developmental Conference

● *ICTRO I*

Organizers, Attendees, Principal Contributors, Sponsors

● *PROLOGUE*

P. Rubin S1

● *RTOG STATUS REPORT*

The Radiation Therapy Oncology Group: An Outline of Clinical Research Activities
L. Brady, S. Kramer, T. H. Wasserman, M. Keiser, L. Davis, T. F. Pajak, J. Cox, P. Rubin, T. Griffin, C. Perez, T. Phillips and H. G. Seydel S3

● *EORTC STATUS REPORT*

The European Organization for Research and Treatment of Cancer (EORTC)
M. Tubiana S13

● *BMRC STATUS REPORT*

An Outline of Research Activities in Radiotherapy of the Medical Research Council's (U.K.) Cancer Therapy Committee
Cancer Therapy Committee S17

● *SPECIAL PRIORITIES*

Quality Assurance/Physics/Dosimetry
N. Suntharalingam and K.-A. Johansson S21

Radiobiology
E. J. Hall and J. F. Fowler S25

The Late Effects of Toxicity Scoring
P. Rubin and T. H. Wasserman S29

● *MODALITIES*

Chemical Modifiers
H. Bartelink, N. M. Bleehen and T. L. Phillips S39

Time/Dose/Fractionation Trials
J. Cox and E. van der Schueren S51

Brachytherapy Trials
J. F. Wilson, D. Chassagne and C. Joslin S57

Large Field Trials
P. Rubin and H.-P. Heilmann S65

Isotopic Immunotherapy: Radiolabelled Antibody
S. E. Order S77

High LET: Heavy Particle Trials
T. W. Griffin, A. Wambersie, G. Laramore and J. Castro S83

Hyperthermia Trials
G. Arcangeli, J. Overgaard, D. G. Gonzalez and P. N. Shrivastava S93

Intraoperative Trials
F. A. Calvo and G. E. Hanks S111

● *DISEASE SITES*

Head and Neck: Cancer Research Plan
V. A. Marcial, W. van den Bogaert and J.-C. Horiot S119

Lung Sites
E. van der Schueren and J. D. Cox S127

Brain Sites
D. F. Nelson, D. G. Gonzalez and N. Bleehen S135

Breast Sites
M. Deutsch S147

Genito-Urinary Sites
M. Rotman and M. Pilepich S159

Gastrointestinal Sites
H. P. Heilmann and L. L. Gunderson S169

Lymphoma: Radiation Therapy in Lymphoma Treatment
T. H. Wasserman and M. Tubiana S187

Gynecology: Combined Radiotherapy and Chemotherapy in Gynecologic Oncology
L. W. Brady, A. M. Markoe, T. DeEulis and G. C. Lewis Jr. S203

● *EPILOGUE*

P. Rubin S211